ON

TYPES OF IMBECILITY.

(PAPER READ BEFORE THE HARVEIAN SOCIETY.)

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ON TYPES OF IMBECILITY.

BEFORE proceeding to the immediate subject of my paper it will be necessary to say a few words on the classification of cases of imbecility. Many systems have been adopted. Some authors, as Esquirol, base theirs upon the power of speech possessed; others, as Bucknill and Tuke, classify according to the degree in which the reflex and volitional functions are manifested. My own is chiefly based upon certain characters existing in imbeciles, the system being one which I have found useful in demonstrating the disease to students. I classify under the headings of "congenital" and "acquired" imbecility, including under the former those cases occurring at the time of birth, under the latter those supervening afterwards.

The classification is as follows:—

IMBECILITY.

Congenital.	*Acquired.*
1. Simple congenital.	1. Eclampsic.
2. Microcephalic.	2. Epileptic.
3. Hydrocephalic.	3. Hydrocephalic.
4. Scaphocephalic.	4. Paralytic.
5. Paralytic.	5. Inflammatory.
6. Cretinism—sporadic and endemic.	*a.* Hypertrophic.
	6. Traumatic.
	7. Cretinism—endemic.

CONGENITAL IMBECILITY.

Before proceeding to describe types of imbecility, I will call your attention to the points to be observed in diagnosing the disease.

In diagnosing imbecility in infancy, we should observe the size and shape, with reference to symmetry, of the head (heads below 17 in. in circumference rarely containing much intelligence); whether there is inability to support it (so that it hangs back motionless), inability of the spine to support the body, any flaccidity of the limbs, any difficulty

in swallowing the milk drawn from the breast; whether the infant is capable of grasping one's hand, any notice taken of passing objects, and what capability of following with the eyes, any notice of sound, any voice. The facial aspect should also be marked (that the patient is of low type can often be seen at a glance); the presence of strabismus or nystagmus should also be noted, as well as the distance between the eyes, these being too nearly approximated in microcephalic and too widely separated in hydrocephalic cases. The position (obliquc or not) of the eyes should be noted, the former being found in the Mongolian variety. The integument about them should be examined for epicanthic or semilunar folds of skin at the inner canthi; and the position of the ears, whether implanted far back or not should be observed.

Later on we compare the child's intellect with that of other children of the same age; we observe whether the fontanelles are closed; the shape of the palate—a highly arched, or, on the other hand, an elongated one being found in congenital imbecility; the grasping power of the hands—often little in imbeciles; the presence or absence of automatic movements, contractures, or spastic rigidity—these symptoms being found in cases of low type; whether there is any flow of saliva from the mouth; the state of the circulation—often feeble in imbeciles; the amount of development of the senses; the presence or absence of will; the presence or absencc of epilepsy.

To the classification of imbecility above given I shall adhere, and I now, without further preface, proceed to describe types of imbecility, endeavouring to impress my descriptions more fully upon you by means of photographs of cases.

Simple Congenital Imbecility.

By this term I mean that the patient was born an imbecile, without any obvious defect or abnormality of skull or limbs. This classification includes some cases of a very low, and others of a fairly high, type. I have with me illustrations of all. The first eight photographs which I hand round illustrate low-type imbeciles, and include two cases of Mongolian imbecility, or furfuraceous cretins—the former name being given to them by Dr. Langdon Down; the latter, which I consider a bad one, by the late Dr. Seguin, of America. You will see at a glance that all eight cases are imbeciles of low type. Note the animal expression, thick lips, pug nose, and small forehead in some; the open mouth, large ears, and depressed look in others. Here is a description of a con-

genital imbecile of low type:—N. M., aged eleven years, is a fairly nourished child with good use of her limbs, very dull in intellect, dirty in her habits, not subject to fits. She cannot speak, but makes a sound like "ah." She can eat with a spoon, but not wash, dress, or do anything. There is some power of observation, but very little of imitation or attention. She does not know a single letter or colour. She has been under training for three years, and has made absolutely no progress. The height of her accomplishments is to scribble on a slate.

The six which I now send round are photographs of cases of a higher type. Two of these are of the Mongolian variety.

The chief characteristics of this type are broad features, an upward slant to the outer droop of the arch of the eyebrows, as seen in the Chinese, a flattened bridge of the nose, tongue rough and presenting transverse fissures, rough skin, and hands and feet short and broad.

The patient E. R., aged eleven years, presents these characteristics. Her mother is a delicate woman, subject to hysterical attacks. The case is supposed to be due to a fright of the mother when pregnant bringing on a hysterical fit. She became very spiteful just before the birth of her child. The maternal grandmother died of apoplexy, and there is a history of phthisis on the mother's side. The parents are temperate. The child is of a cheerful disposition, but very restless and destructive. She is able to talk a little. On admission she did not know a single letter or colour and had no knowledge of figures. She has made some progress during the four years she has been under training, having learnt the alphabet and many words which have been taught her on the word method of teaching reading. She can spell many words as well, has learnt some arithmetic, and knows all the colours and several forms. Can sew a little. This child will, in course of time, be sufficiently improved to send home, but she will have to be under the care of some one during the whole of her life.

Two of the patients have a vaulted palate, and one has a protruding alveolar arch. The vaulted palate is fairly often present in cases of imbecility, but as it is seen in persons of perfect mental condition, the only inference to be drawn from its presence, is, I think, that if we find it in an imbecile patient it enables us to say the case is a congenital one. Other characteristics, present or absent, in addition must of course guide us in giving a prognosis.

The next seven photographs represent cases which have

much improved. On comparing these with those of low type the difference in the facial expression is most marked. All have a fairly intelligent look, and the expression on the whole is pleasing. The boys have all learnt trades in the Asylum, and are able to earn a fair amount by them, and so contribute towards their maintenance. The girls are occupied in domestic work.

The cases of E. H. and T. B. will show what can be done by proper care and training.

E. H., aged thirteen years, is a well-nourished, dark-complexioned girl, well behaved, but lazy. She can speak fairly well. On admission she could spell words of two letters, write a few letters, knew a few colours, and could add two and two together. She is now able, after two and a half years' training, to read words of four and five letters, add to twenty, do easy multiplication tables, and make pinafores and other articles of clothing. She works in the dormitory every morning before going to school. Her father was a delicate, weak-minded man, and her paternal uncle was insane. She was born prematurely owing to a fall of her mother, was a delicate child, and did not walk till two, or talk till seven years old.

T. B., aged seventeen years, a fairly nourished boy, of dark complexion, usually of a quiet disposition, but sometimes obstinate and inclined to be combative. On admission, could read words of one syllable with a few letters, do easy multiplication tables, and knew all the colours. After three and a half years' training, he has learnt to read and write fairly, compose a letter, do compound addition, subtraction, and multiplication sums, and acquire the trade of a shoemaker. He was removed from the school a year ago, and now passes the whole of his time in the shop, and is an excellent shoemaker. He has a fair knowledge of music, and plays in the fife-and-drum band.

Microcephalic Imbecility.

These are cases where the head is smaller than normal. The first of the two photographs which I send round represents a case whose head measured only 12 in. in circumference, and her brain was found after death to weigh only seven ounces. This is a photograph of it. By comparing these two outlines of heads—a microcephalic and an ordinary one—you will see the great difference between them. With the exception of a brain weighing only one ounce, taken from a microcephalic baby, it is the smallest one I have ever seen. To a great extent this patient led a vegetating life, but she learnt to recognise those around

her, became cleanly in her habits, and made an attempt at articulation. Although she could move her limbs, she could not stand, and she had no idea of feeding herself. The second photograph is that of a boy aged fifteen, who has a sister, also microcephalic, in the Asylum. His head measures $17\frac{3}{8}$ in. in circumference, and that of his sister $16\frac{1}{2}$ in. He is lively and good-natured, as are nearly all microcephalics who are able to run about, but he knows and has learnt very little. He has been under training for two years, but has made scarcely any progress; is unable to speak, and can only make ejaculatory sounds; has learnt the manual alphabet, can spell a few words on his fingers, and match a few colours. His sister, although her head is smaller, has made more progress, and of the two has more intelligence, though, of course, small in amount. I have several microcephalics under my care in Darenth Asylum, and have seen others with heads measuring from $15\frac{1}{2}$ in. to $17\frac{1}{2}$ in., but none have made much progress under training, and, in fact, from the small amount of brain and deficient quality of it, little can be expected.

It was formerly held that this condition was due to the sutures of the skull closing in prematurely, and so hindering the growth of the brain; but, in contradistinction to this, we have the fact that many microcephalic imbeciles have been found with open sutures. "In those cases where the sutures have closed in before birth, the question still remains, whether the brain ceased to grow because the sutures were closed, or whether the sutures closed in because the brain ceased to grow, or whether the brain and its coverings ceased to grow from a common cause."*

Hydrocephalic Imbecility.

We are now about to consider those cases which are hydrocephalic before birth. All cases of hydrocephalus do not, of course, become imbecile. Many who escape recover, but there are a few who do not die, and do not recover, but become imbecile. The hydrocephalic head is quite different from that found in rickets. In hydrocephalus the fontanelle is raised; in rickets it is depressed, and the head is elongated in the antero-posterior diameter. In hydrocephalus it approaches the globular form, and the antero-posterior and transverse diameters are nearly the same. The widest circumference is often at the temples, where there is sometimes a perceptible bulging above the usual place of greatest width around the superciliary ridges. This was well-marked in the case whose photograph I hand round.

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* Dr. Ireland, "Idiocy and Imbecility."

Imbecility is not often complicated with rickets. Out of 1000 cases, which I have had under my care, I have only seen three cases of well-marked rickets. The following is a case of congenital hydrocephalic imbecility:—

C. O., aged twelve years, is a well-nourished boy, of fair complexion, whose parents are fairly healthy people. There is no history of phthisis, but his paternal uncle has had three fits, and is now paralysed and his speech affected. The boy had a large head when born, and the mother had a tedious labour in consequence. She ascribes the condition to fright during pregnancy, on seeing a man with a large head and no use in his legs go along Oxford-street, piloting himself along with his hands. The boy is good-tempered, but very listless, and, being weak in his legs, will sit all day long in a chair if allowed to do so. He cannot speak, but makes a number of sounds, the meaning of which cannot be discovered. He has some power of observation, though but little of imitation and attention. He does not know a letter or colour. His head measures 24½ in. in circumference, 17 in. in the transverse diameter, and 16½ in. in the antero-posterior diameter, thus bearing out the remark I made above, that the transverse and antero-posterior diameters in hydrocephalus are nearly the same. He died twelve months ago of lobular pneumonia, and his brain was found to contain thirty-six ounces of fluid, or nearly two pints. The lateral ventricles were enormously dilated, measuring 7 in. in length and 3½ in. in width. Above them the brain-substance was very thin, being not much more than ¼ in. in thickness on the convex surface. The convolutions were exceedingly coarse, some of them measuring 1 in. in width, so that there was deficiency in quality as well as in quantity. He made absolutely no progress during the year of his residence in the Asylum.

Scaphocephalic Imbecility.

These cases have a keel-shaped head, but whether produced by difficult labour or not I have been unable to ascertain, as the patient I have under my care—the only one I have ever seen—has no friends; and hence I am unable to obtain the cause. F. R., aged eleven years, is a fairly nourished boy, of dark complexion, and depressed appearance. His head measures 22¼ in. in circumference, 12½ in. transversely, and 16¾ in. antero-posteriorly; so that we have four inches difference between the two last measurements. The outline shows the shape of the head very well. He speaks indistinctly, and during the time he has been with us has made little progress. He has learnt only one letter, and can write

only two. He can add one and one, count to twenty, do some easy multiplication tables, and has learnt a few colours. Little improvement, I am afraid, can be expected.

Paralytic Imbecility.

I now refer to cases paralysed at the time of birth. Generally, paralytic imbeciles make fair progress mentally, if there are no fits and the injury to the brain is not great in amount, but physically (with regard to the paralysed limbs) little. The following case—G. L., aged ten years—was born with the left arm contracted and useless, and little power in the legs, though he could move them about. The imbecility is supposed to be due to a fright of the mother during pregnancy. The father is intemperate, and at times suffers from severe headache. The paternal aunt is epileptic. The child cannot speak, but cries when wanting anything. He is subject to fits, and his mental capacity is very small. At his death, which took place six months after admission from exhaustion due to repeated fits, there was found to be a space between the dura mater and cerebrum filled with fluid, taking the place of the brain, which had undergone atrophy. In this case no cause (I mean a clinical one) could be assigned for the condition; but in another one which I have under treatment, who was born with paralysis of the right side, the mother, when pregnant, fell with great violence, striking her side against a wall, and becoming insensible. In that case there was flattening of the side of the cranium opposite to the paralysis. The boy is fairly intelligent and makes good progress.

Sporadic Cretinism.

This type is fairly common in this country, and is characterised by the presence of fatty tumours in the posterior triangles of the neck, with, usually, absence of the thyroid gland. The patients are stunted in growth and deficient in intelligence. The four photographs which I hand round represent types of this disease. They all present the same characters, viz. (in addition to those already mentioned), a broad face, pug nose, thick lips, full and flabby cheeks, short arms and legs, and large hands and feet. They are usually very fat. The boy of whom two photographs are shown was fifteen years old at the time of his admission into the Asylum, and presented the same configuration of body at birth. The father is a weak-minded but temperate man, who worries himself a good deal. The mother is a Dutch woman, subject to severe headache. There is a history of consumption on both sides of the family. The patient was short and stout, usually good-tempered, but at times

pugnacious. He had good use of his limbs, but was slow in his movements. Could talk, but usually spoke very little. He was under training for three years, but learnt scarcely anything either in school or shop. At his death, which occurred two years ago, the same appearances were found as in the girl, viz., fatty tumours, and no thyroid gland. The convolutions of the brain were coarse, and the structure simple. Little improvement occurs in this class.

ACQUIRED IMBECILITY.

More improvement, I think, on the whole, occurs in this class than in Congenital Imbecility, and it appears to me that this is what *à priori* would be expected. Congenital imbeciles are born with brains deficient in quality as well as, often, in quantity. Whether training does or does not increase the number of cells is a moot point; but if it simply improves the quality of those present, although improvement may occur, I cannot see that we can ever expect recovery to take place. The microscopical sections in my possession show the greatest difference between a normal brain and that of a congenital imbecile. In the latter the cells are not only less in number, but also less highly developed, and in some sections resemble those of the lower animals. In acquired imbecility we have a brain which, though often highly sensitive and easily upset by slight causes, is no doubt of normal structure at first, and in course of time in many cases regains its normal condition, in the same way as does the brain of a lunatic. Exception must be made to those patients who are subject to frequent and repeated fits, and in whom treatment has no effect. On the other hand, some of my most improved cases have been epileptics in whom there has been an entire cessation of fits under treatment.

Eclampsic Imbecility.

These are cases where convulsions have come on soon after birth, continued some years, and then ceased, but have so altered the structure of the brain that the child has become imbecile. In most of the cases which have come under my notice there has been intemperance, or a history of insanity, apoplexy, or epilepsy in the parents, and the child has been handicapped, as it were, in the race of life, and had less chance of recovery from the fits without loss of intellect. The photograph which I hand round represents a case of this kind. Fits came on at twelve months, and continued for nine years. She is very dull, and has made scarcely any progress. There are several cases of the kind in the Asylum, and I select one

as a specimen. A. H., aged eighteen years, appeared mentally sound at birth, and was a lively child up to the age of two years. She had convulsions when cutting her teeth at the age of seven months, and they continued till she was five years old. After the fits ceased – that is, when she was five and a half years old—she became first very excitable, and afterwards very quiet. The mischief by that time was done. Both her paternal uncle and grandfather were insane, so that in all probability she was born with an unstable brain, which was easily upset. On admission, she was a fairly nourished child with a muddy complexion, and so listless in disposition that she would sit still for hours together if allowed. She could not speak, though she would sing to herself at times—the ability to sing before being able to speak being an occurrence not at all uncommon among imbeciles. Some, as Meynert, account for the fact by affirming that there is a separate centre for music; others by saying that singing requires a less highly developed brain than speaking, and therefore the accomplishment would appear first in the course of development, and disappear last in disease. The girl was three years and a half under training in the Asylum, and during that time learnt absolutely nothing.

Epileptic Imbecility.

As before stated, this class includes some cases where, with cessation of fits, the greatest improvement takes place, and others who go on from bad to worse, the fits becoming more frequent and more severe, and the result is utter dementia. The first three photographs which I send round represent cases of entire recovery. One of the boys has been sent home and is earning his living as a shoemaker; the girl is earning her living in the Asylum as a servant; and the other boy, though cured of the fits, I still think requires some further training before sending him home. The next three are cases of great improvement. The fits have become less in number, and in course of time, I have no doubt, will cease entirely. The faces all present a fairly intelligent appearance. These three boys have learnt tailoring, and one of them is, as represented in the photograph, in the fife-and-drum band.

The photograph which I now hand round is that of L. F., aged ten years, who has made little improvement. She is brighter than when admitted, but still does not make much progress. Her maternal grandfather is epileptic, and three of her brothers and sisters died of convulsions in teething, so that the family history is bad. She was very excitable as a child, and when six years old had a number of fits, which have continued ever since. After them speech was lost for a time. On admission she was a fair-haired, well-nourished,

nice-looking child, very listless, and unable to say more than a few words. After about six months' residence in the Asylum she became much brighter, would talk and take an interest in what was going on around her. Then, as a result of frequent fits, she became lost and dazed. She remained in this condition for several months, when she became a little brighter and made a little progress in school. She could repeat letters, numbers, etc., but could not be made to answer a question. Lately the fits have become much less frequent, and she talks more.

The last case, that of M. Y., shows the demented state into which patients get as the result of repeated fits. Her face, you will see, is of low type in addition.

These patients illustrate the remarks I made just now. You have seen photographs of three who have recovered—three much improved, one little improved, and one who has deteriorated.

Hydrocephalic Imbecility.

I just now spoke of cases which were hydrocephalic and imbecile from the time of birth. I now go on to describe others who, though hydrocephalic at birth, did not become imbecile till some time afterwards. F. W., aged eighteen, on admission was found to be a well-nourished boy, with weak circulation, dull and listless. The family history is not encouraging. His father and paternal grandfather died of apoplexy, and two paternal uncles are insane. In addition, all the father's side of the family are excitable, and there is a history of phthisis on the mother's side. When eleven months old he screamed and became very excitable, but had no fit, according to the mother's account, though I think there is every probability he had one, from the fact that he afterwards became paralysed on the right side. He remained so for six months, and then gradually recovered. There was no sign of paralysis when he was admitted, though he was weak in both legs. As he grew up, he was noticed to get weaker and become dull. His parents are respectable people, and he had every chance of a good education, but he was unable to learn. When admitted he could only count to six; and though he was at school in the Asylum for three years and a half, he only learnt to read and write a few letters, repeat easy multiplication tables, and recognise a few colours. About eighteen months ago he grew very weak, passed his urine and fæces under him, and gradually died of exhaustion from diarrhœa. He had no fits while in the Asylum, so that one must suppose that his gradual deterioration was due to increasing quantity of fluid in the brain pressing on the cerebral tissue. Unfortunately I was unable to obtain a post-mortem examination.

Paralytic Imbecility.

I now refer to cases who have become so after birth, either from repeated fits, infantile paralysis, cerebral apoplexy, or atrophy of the brain. In these cases, as in those born paralysed, there is mental improvement under training if the patient is not subject to fits, but the paralysed limbs make little progress towards recovery. Schroeder van der Kolk has collected several cases where there was found shortening and atrophy of the limbs on one side, and atrophy of the opposite side of the brain. I have seen one such case myself. In the majority of patients more or less imbecility existed, though this is not always the case. He says: "Everything, in my opinion, depends upon the more or less healthy state of one hemisphere of the brain. If, as from the nature of the case seldom occurs, the inflammation and affection of the pia mater has not extended to this hemisphere, if the grey matter under the cerebral convolutions has here continued perfectly sound, there is no reason why this remaining hemisphere should not be able to act without impediment in the exercise of those functions which are necessary to our mental powers, just as one eye sees as sharply though the other be lost. But when the grey matter is injured in both hemispheres, particularly anteriorly, disturbance of the intellectual faculties will be inevitable." Most of the cases of acquired paralytic imbecility in the Darenth Asylum have become so from repeated fits, and the photograph which I now send round illustrates one of this kind. It is that of R. F., who, when admitted, was nine years old. The family history shows that his father was very intemperate, and died in India some years ago. His mother at the time of his admission was in Hanwell Asylum, so that there is every probability that his brain was unstable from birth. The boy was subject to fits, which came on four years before admission, and soon afterwards he was noticed to be getting dull. On admission he was found to be fairly nourished, but his face was stolid and expressionless; he was paralysed in the left arm, and there was paresis of the left leg. He knew and could be taught nothing, but he was often absent from school in consequence of the frequency and severity of his fits. These became more and more severe, and reduced him to a perfectly animal condition, and he finally died exhausted.

The case of W. C., aged thirteen years on admission, is an example of marked mental, though but little physical, improvement (I mean as to his limbs). There was a history of consumption on the father's side; and a paternal uncle died paralysed. He was a healthy child when born, but when

three years and a half old he had a fit in the night, and when he woke up in the morning he was paralysed. Nine months afterwards he had another fit, affecting the right side. He never recovered good use of his leg, though his arm and hand regained nearly their normal power. On admission, he was a fairly intelligent-looking boy, with paresis of the right leg, so that he walked with a halting movement. He had fair power in his arm and hand. He could read—though badly—from the First Standard, write in a copy-book, and do an addition sum incorrectly. He made such progress that, after three years in the school, he learnt to read and write well and became a good arithmetician. He was put to work in the shoemaker's shop, where, after a little while, he improved so much that his labour was calculated to be worth 6s. per week. I have recently discharged him to the care of his friends.

Inflammatory Imbecility.

I mean by this term imbecility which has come on after some illness, such as measles, typhoid fever, whooping-cough, etc., as a result or complication of which there may be inflammation of the brain or membranes—not sufficiently grave to be fatal, but serious enough to cause mental impairment. "The amount of damage to the intellectual powers," as Dr. Ireland says, "must be mainly dependent upon the intensity of the morbid process." This, unfortunately, we have seldom a direct opportunity of measuring, as the patient does not come to us till long after the disease has passed away. If one of the diseases above mentioned should occur in a child previously disposed to imbecility by being born of parents whose family history shows the existence of marked neuroses, there would be the greater likelihood of imbecility following.

The three photographs which I now hand round are all cases of this class. In the first, R. D., the imbecility came on after a serious illness when four years old. In the second, J. I., it came on after whooping-cough and typhoid fever, when two years and a half old; and in the third after measles, when four years old. After this she (third case) became excitable and passionate, and continued uncontrollable and excitable. On admission, she was a fairly nourished, well-behaved child, who was able to be of some use in the ward. She could read incorrectly from the First Standard, spell words of two and three letters, and knew a few colours. After four years' training, she can read correctly from the Second Standard, spell words of four and five letters, write words of two letters in a copy-book, do multi-

plication tables, and make herself useful both in sewing and in her dormitory. I have sent her home on two months' trial, in order to see what progress she makes in the outside world.

Another patient, E. W., has made less progress, perhaps on account of a bad family history, and more injury accruing to the brain. She is said to have become imbecile from inflammation of the back of her neck when eighteen months old, but, as she became unconscious, I think there is no doubt the disease was some form of brain-affection. One of her maternal aunts is epileptic, and several of her brothers and sisters have died of convulsions in teething. On admission, she was a quiet, useful girl, occasionally lost in her manner. She remained in the school for three years and a half, but only learnt to read and write a few letters, do a little simple arithmetic, and recognise the colours.

Hypertrophic Imbecility.

I have placed this class under that of the inflammatory, because the post-mortem appearances of the patients who have died of this disease in the Asylum show that there is or has been chronic inflammation of the brain. I proceed to relate two cases. The first, A. H., aged sixteen years, was under treatment for twelve months, when he died. There was no history of nervous or any hereditary disease in the family. The parents were temperate. His mental deficiency is said to have been noticed after a series of convulsions from which he suffered when teething at the age of nine months. He had none afterwards. On admission, he was a well-nourished boy, of dark complexion, with a large head, square in shape, and having well-marked frontal prominences. He was bright-looking, good-tempered, and willing to work. There was no loss of sensation or of motion, and no sign of rickets. His mental capacity was fair. He went to school in the Asylum, worked as a tailor, and assisted in household work. During the ten months he was under training he made good progress in school and shop. He was an imbecile, who, if he had lived, would have considerably improved. His general health was good, and, until the illness from which he died, he had only been treated for minor ailments. About five days before death he was seized with a convulsive tremor, from which he recovered, but on the day of his death he had another fit, from which he died. At the post-mortem examination, besides congestion of the brain and membranes, there was excess of subarachnoid fluid and a layer of pus over the posterior portion of the frontal convolutions on

the right side. This, no doubt, was the cause of the fit. The important point, however, was the great size of the brain, which weighed sixty-two ounces. This immense weight was due to the large increase in the amount of the white matter, which, on being subjected to microscopical examination, showed a uniform granular appearance, with nerve-cells scattered sparsely throughout. There were a number of leucocytes and vessels present, but these appearances were no doubt due to the disease which ultimately caused his death.

The second case, A. C., aged ten years on admission (whose photograph I pass round), was admitted five years ago. His mother is hysterical, and had an epileptic fit when pregnant with her eldest child. The maternal grandmother died of epilepsy. On the father's side there is a history of phthisis. The mother had a fright when pregnant with A. C., and became unconscious. When two years old, while teething, he had a fit, and he has had them ever since. He was always dull and sleepy, and, as a child, used to "bob" his head forwards. The head was large when he was born, but the projections on his forehead have since come on. He is a fairly grown boy for his age, but has a very vacant look. The head is large, square in shape, and there are well-marked frontal prominences. He complains at times of headache, and points to the right temporo-parietal region when asked where the pain is situated. There is a very slight depression, the size of a sixpence, in the region of the anterior fontanelle. He walks slowly and totteringly, hanging his head slightly forward, and with his left shoulder depressed. He cannot stand long at a time: soon he begins to lean forward, and would fall if not supported. He goes to school fairly regularly, but makes no progress. Questions are answered slowly, and there is a distinct pause before the reply commences. He suffers much from headache, and altogether is gradually deteriorating. The intelligence is not always affected in hypertrophy of the brain, yet mental deficiency is often the result, and the disease is chiefly met with in institutions for imbeciles and lunatics. During my three years of office at the Children's Hospital I never saw one case, but six have come under my observation during the last seven years at the Clapton and Darenth Asylums. Andral says that there are two periods in the disease—first, the chronic stage, when the symptoms, whatever they may be, are slight; in the second it suddenly presents the appearance of an acute affection, and the patients die of convulsions, or of some acute affection of the brain. In the first of the two cases, particulars of which I have given, the

disease certainly took this course. The second case is getting progressively weaker, and I have no doubt will some day die of exhaustion from epilepsy or brain-disease, if not previously cut off by some lung-affection.

None of my cases have presented signs of rickets. Dr. West, however, states that hypertrophy of the brain is associated with that disease, but he goes on to say that, as the health improves, the rickety deformity of the limbs gradually disappears.

As my cases of hypertrophy of the brain, with one exception, were not admitted till after the age of ten years, and were in fair bodily health at the time, any rickety deformity which may have been present would no doubt have disappeared. With reference to the weight of the brain of A. H., I would just mention that, comparing it with that of others of the same age who have died, I find that it weighs fourteen ounces and a half more than the highest weight recorded.

The diagnosis of hypertrophy of the brain from chronic hydrocephalus chiefly rests on the history of the case and the form and size of the head. Dr. West remarks that "the symptoms of chronic hydrocephalus generally come on earlier, and soon grow more serious, than those of hypertrophy of the brain, and the cerebral disturbance is throughout more marked in cases of the former than in those of the latter kind." My distinctive diagnosis of hypertrophy of the brain from chronic hydrocephalus rests on the following points:—

In hypertrophy, the brain does not attain so large a size as in chronic hydrocephalus. The first case related measured 23 in. in circumference, the second 22 in. I have three cases of chronic hydrocephalus now in the Asylum, and their heads measure respectively $23\frac{1}{2}$, $25\frac{1}{2}$, and $25\frac{3}{4}$ in. in circumference.

In hydrocephalus the increase in the size of the head is most marked at the temples; in hypertrophy, above the superciliary ridges.

In hypertrophy the head is square in shape; in hydrocephalus it is rounded (outlines).

In hydrocephalus there is often elasticity over the late-closed fontanelle. In hypertrophy there is none, and there is often a depression in that situation.

In hydrocephalus the distance between the eyes is increased; in hypertrophy this is not the case.*

* I have treated the subject more fully in a paper, "On Hypertrophy of the Brain in Imbeciles," published in the *Journal of Mental Science*, April, 1881.

Traumatic Imbecility.

In this class are included cases where, from a fall or blow on the head, the patient becomes imbecile. Under this heading also would come cases resulting from injuries to the head caused by narrowness of the pelvis and prolonged labour. The degree and nature of imbecility so produced must vary with the amount of the destruction of nervous tissue. "Sometimes the injury to the mental power is permanent, sometimes it disappears more or less slowly: in some cases a trifling injury causes grave disorder; in others, what appears to be a great injury leaves no visible effects behind. Hereditary predisposition has, no doubt, much to do with this."* The photograph of E. R., aged twelve years, illustrates a case of this class. The child was born while the mother was standing, and the head came in contact with the foot of the bedstead. The mother was very much worried when pregnant with this child, and this, no doubt, further contributed to the child's imbecility. The family history is good. The patient has made good progress, and will, in course of time, very probably, be discharged recovered.

C. H. K., aged fourteen years, is not so likely to improve, and this is probably due to the fact that he has an intemperate father, and his maternal grandmother is epileptic. We have here hereditary predisposition exerting its influence. The boy was mentally sound when born, and continued so till he was five years old, when he fell from a height on to the back of his head, and was picked up insensible. After the fall he was noticed to become foolish. He is a well-nourished boy, of cheerful temperament, and though he attended school for some time before admission, learnt very little. On admission, he could only read and write a few letters, and could not add one and one together. He has been with us now over three years, and has learnt the alphabet and several words by the word method of teaching, but has made little progress in arithmetic and in the tailor's shop. I have many other cases of this class in the Asylum, but in these the fall on the head has produced epileptic fits, and their continuation has prevented mental improvement.

Endemic Cretinism

Is not very common in this country, though cases are met with in Derbyshire, Somersetshire, and the West of Yorkshire. I saw some cases in the Savoy two years ago, and

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* Ireland, *op. cit.*

found that they differed from the cases of sporadic cretinism which have come under my notice in the Asylum, in consequence of the presence in the former of large goîtres and the absence of fatty tumours in the posterior triangles in the neck. Otherwise they present the same characters as those described in a former part of the paper. A Commission, appointed by the Sardinian Government, divided them into three classes, according to the measure of their mental powers :—

In the first class the subjects have only vegetative faculties, are entirely destitute of reproductive and intellectual powers, and cannot speak. These are styled simply cretins.

In the second class they have vegetative and reproductive faculties and some rudiments of language Their intellectual efforts go no further than their bodily wants, corresponding only to the impression of the senses. These are called semi-cretins.

The third class adds to the faculty of the preceding one a greater amount of intellectual power, without reaching the normal human capacity. They have some aptitude at learning a trade or doing different kinds of work. They are called *crétineux* or cretins.

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